

From: Terri-A White/R3/USEPA/US
Sent: 3/30/2012 11:17:46 AM

To: "Abrahm Lustgarten" <Abrahm.Lustgarten@propublica.org>
CC: "seneca.roy@epa.gov" <seneca.roy@epa.gov>
Subject: EPA Responses to Your Questions

Hi Abrahm,

Here are responses to several questions you asked. We'll cover these and other technical aspects on the call with Dennis on Monday. -- Terri

QUESTION 1) At this point, I'm looking hard at the detection limits. I'm left to speculate here, but I'm now guessing perhaps your system snafus prevented the J's from showing up on minute detections. But that raises other questions: Why are you listing estimated detections several orders of magnitude away from your detection limits?

It is correct that "J" qualifiers were omitted from the original data package provided to the first 11 residents. Residents received updated, corrected packages. It's important to note that none of the actual results changed.

QUESTION 2) If the detection limits are expressed accurately, how would that be possible? For instance, in one test benzo(a)pyrene is listed non-detect, with a "U" and a detection limit of 5ug/L. In another test it was listed as "detected" at .05 ug/L. (now in the new version it is estimated at .05ug/L "J").

It is possible for the laboratory to "see" results below the stated detection limit. This means that some amount of the compound in question was detected and can be reasonably estimated even though it could not be accurately quantified by the lab instrument ("J" qualifier = estimated value).

QUESTION 3) And by the same token, why are all the detection limits more or less the same – and relatively high? Wouldn't they be different for different substances?

Analytical methods are established for classes of compounds. Benzo(a)pyrene and other poly-aromatic hydrocarbons (PAHs) are classified as semi-volatile compounds, and there is usually a common detection limit for each class of compounds according to the method. Detection limits would vary by class of compound and analytical method.

QUESTION 4) And for Benzo(a)pyrene, which has an MCL of .20 ug/L max, why would a detection limit of 5.0 ug/L be acceptable?

The detection limits listed in the data reports are typically what the laboratory would call a quantitation limit. Quantitation limits are established by the analytical method and instrumentation capabilities and are the minimum concentration of an analyte that can be measured within specified limits of precision and accuracy. Classes of compounds are generally analyzed using the same laboratory method.

Benzo(a)pyrene and other poly-aromatic hydrocarbons (PAHs) are classified as semi-volatile organic compounds, which were analyzed using Method 8270D, with a quantitation limit (QL) of 5 ug/l; which as acknowledged is higher than the MCL. With that said lab personnel can typically detect that a chemical is present at values below the QL and can reasonably estimate a concentration that is then reported and validated. In this case the lab is confident that they could detect at levels below both the QL and the MCL. Because the value cannot be precisely stated from the instrument, it is qualified as "J", estimated.

QUESTION 5) Finally... items exceeding the trigger level have been forwarded to a toxicologist, I understand, but why wouldn't the one 2.0 ug/L estimated detection of benzo(a)pyrene in HW04 have been sent to a toxicologist?

All results are reviewed by an EPA toxicologist. We do not have a 2.0 ug/L result for benzo(a)pyrene in HW-04 as mentioned; rather, we have 0.05 ug/L with a "J" qualifier for HW-04.

QUESTION 6) Were these all done by the same lab?

All of the PAHs were analyzed at EPA's laboratory in Fort Meade, Maryland. Other analyses were split up among several EPA labs and some private labs.

QUESTION 7) Were there different methods applied to different tests or for different substances?

Yes. The sampling plan is posted on the EPA website (http://www.epaosc.org/dimock_residential_groundwater) and identifies the lab and methods for analyses.

QUESTION 8) Is any of this background technical information releasable? (Surely it can't have privacy concerns attached to it)

Most of this information is readily available on EPA's Dimock website.

http://www.epaosc.org/dimock_residential_groundwater